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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/748,636	12/30/2003	Ahmad Fakheri	72611-003	6883
29493 7590 08/07/2008 HUSCH BLACKWELL SANDERS LLP 190 CARONDELET PLAZA SUITE 600 ST. LOUIS, MO 63105-3441				
EXAMINER				
LEO, LEONARD R				
ART UNIT		PAPER NUMBER		
3744				
MAIL DATE		DELIVERY MODE		
08/07/2008		PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/748,636

Applicant(s)

FAKHERI, AHMAD

Examiner

Leonard R. Leo

Art Unit

3744

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
 - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
 - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
 - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 April 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 3-8, 10-12, 20, 23, 26, 28, 29, 31 and 33-39 is/are pending in the application.
- 4a) Of the above claim(s) 4, 10, 20, 23, 29, 31 and 35 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 3-8, 10-12, 20, 23, 26, 28, 29, 31 and 33-39 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of Reference Cited (PTO 152)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO 413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

The amendment filed on April 30, 2008 has been entered. Claims 3-8, 10-12, 20, 23, 26, 28-29, 31 and 33-39 are pending, and claims 4, 10, 20, 23, 29, 31 and 35 remain withdrawn from further consideration.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 3, 5-6, 8, 11-12, 26, 34, 36 and 38-39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Steenstrup in view of Ares.

Steenstrup discloses all the claimed limitations except the fins extending beyond an outer extent of the conduits.

Ares discloses a heat exchanger comprising a core 16a, 16b having regularly spaced apart fin segments 20a, 20b extending beyond an outer extent of the conduits 18a, 18b for the purpose of increasing the surface area in contact with the conduits to increase heat transfer.

Since Steenstrup and Ares are both from the same field of endeavor and/or analogous art, the purpose disclosed by Ares would have been recognized in the pertinent art of Steenstrup.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to employ in Steenstrup fins extending beyond an outer extent of the conduits for the purpose of increasing the surface area in contact with the conduits to increase heat transfer as recognized by Ares.

Regarding claim 5, Figure 2 of Steenstrup discloses fins 25 having fin segments spaced apart at regular intervals.

Regarding claims 8 and 36, Figure 2 of Steenstrup discloses helical conduit 21 is circular shaped.

Regarding claim 10, Ares discloses blower 44 disposed within the core.

Regarding claim 11 and 26, Figure 1 of Steenstrup discloses fin segments have a plurality of openings or slots along the edge thereof corresponding to the number of loops of the helical conduit 21.

Regarding claim 12, Figure 6 of Ares discloses collars 52 defining through-holes in the fin segments 20a, 20b.

Regarding claims 34 and 39, the device of the combination of Steenstrup and Ares structurally meets the claim limitations. The recitation of "such that a second working fluid flows substantially perpendicular to the said axis over said conduit and fins" in claim 34 and "that allow for the radial flow of the outside fluid" in claim 39 are functional and not structural limitations. See MPEP 2114.

Claims 3, 5, 8, 11, 26, 33-34 and 36-39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Steenstrup in view of Fieni or Scholl.

The device of Steenstrup lacks the fins extending beyond an outer extent of the conduits.

Fieni discloses a heat exchanger comprising a plurality of fins 10 having through-holes 11 receiving conduits 17 and extending beyond an outer extent of the conduits for the purpose of increasing the surface area in contact with the conduits to increase heat transfer.

Scholl discloses a heat exchanger comprising a plurality of fins 1 having through-holes 27 receiving conduits 30-32 and extending beyond an outer extent of the conduits for the purpose of increasing the surface area in contact with the conduits to increase heat transfer.

Since Steenstrup and Fieni or Scholl are both from the same field of endeavor and/or analogous art, the purpose disclosed by Fieni or Scholl would have been recognized in the pertinent art of Steenstrup.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to employ in Steenstrup fins extending beyond an outer extent of the conduits for the purpose of increasing the surface area in contact with the conduits to increase heat transfer as recognized by Fieni or Scholl.

Regarding claim 5, Figure 2 of Steenstrup discloses fins 25 having fin segments spaced apart at regular intervals.

Regarding claims 8 and 36, Figure 2 of Steenstrup discloses helical conduit 21 is circular shaped.

Regarding claim 11 and 26, Figure 1 of Steenstrup discloses fin segments have a plurality of openings or slots along the edge thereof corresponding to the number of loops of the helical conduit 21.

Regarding claims 33 and 37, Fieni discloses conduits 17 having a circular or oval cross-section (column 2, lines 57-58). Scholl discloses conduits 30-32 having a circular, drop-shaped or elliptical cross-section (Figures 9-11). As clearly demonstrated by Fieni and Scholl, conduits of various geometric cross-sections are obvious variants of one another.

Regarding claims 34, 37 and 39, the device of the combination of Steenstrup and Fieni or Scholl structurally meets the claim limitations. The recitation of “such that a second working fluid flows substantially perpendicular to the said axis over said conduit and fins” in claim 34, “the second working fluid flowing substantially perpendicular to the said axis over said conduit and fins” in claim 37, and “that allow for the radial flow of the outside fluid” in claim 39 are functional and not structural limitations. See MPEP 2114.

Claims 7 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Steenstrup in view of Fieni or Scholl as applied to claims 3, 5, 8, 11, 26, 33-34 and 36-39 above, and further in view of Dailey.

The combined teachings of Steenstrup and Fieni or Scholl lacks a blower around the core.

Dailey discloses a heat exchanger comprising a core 62 and blower 50 disposed around the core for the purpose of increasing airflow to improve heat exchange.

Since Steenstrup and Dailey are both from the same field of endeavor and/or analogous art, the purpose disclosed by Dailey would have been recognized in the pertinent art of Steenstrup.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to employ in Steenstrup a blower disposed around the core for the purpose of increasing airflow to improve heat exchange as recognized by Dailey.

Response to Arguments

The anticipatory rejection in view of Steenstrup is withdrawn in view of the claim amendments.

The declaration under 37 CFR 1.132 filed April 30, 2008 is insufficient to overcome the rejection of claims 3, 5-8, 11-12, 26, 28, 33-34 and 36-39 based upon Steenstrup and Ares or Steenstrup and Fieni or Scholl as set forth in the instant Office action because: the showing is not commensurate in scope with the claims. The graph or plot on page 1 of the declaration does not compare the claimed invention versus the closest prior art. Furthermore, the graph or plot omits a legend. The plot on page 4 of the declaration does not compare the claimed invention versus the closest prior art.

Applicant's arguments have been considered but are moot in view of the new ground(s) of rejection.

As noted above, the graph or plots are based on dimensional considerations of the instant invention not recited in the claims.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Leonard R. Leo whose telephone number is (571) 272-4916. The examiner can normally be reached on Monday thru Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cheryl Tyler can be reached on (571) 272-4834. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/ LEONARD R. LEO /
PRIMARY EXAMINER
ART UNIT 3744

August 8, 2008